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ABSTRACT

This essay reviews accounts of nontraditional schools in various parts of the United States, some of which are public-private ventures. All use computers in conjunction with practices such as the whole language approach, the language experience method, ability grouping, and individualized instruction. Review of the accounts leads to the conclusion that properly implemented instructional technology has a definite place in the repertoire of educational strategies and can be integrated into existing instructional approaches. When combined with careful, accurate diagnosis, proper use of computer technology can help overcome a number of learning problems, including attention deficit disorders, visual-spatial problems, vocabulary expansion, and sequencing. Of particular value with learning-disabled students is the capacity of instructional technology to address the unique learning needs of each student. Implementation of instructional technology depends upon properly prepared teachers as well as parental and public support. In addition, financial resources need to be assured in order for schools and school districts to plan for effective use of instructional technoloty. By enhancing the instructional effectiveness of schools, technology can help move them closer to the goal of providing quality educational experiences for all children. (IAH)

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Susan Partridge

Teaching Children, Including LD's, in This High-Tech Age

The wonders of technology seem endless, and their effects are being shown in various degrees in our schools. On Tuesday, September 3, 1991, Susan Kaufmann (4), a staff writer for a Raleigh, North Carolina newspaper, wrote about some of these wonders, as she explained New Hope Elementary School, located between Chapel Hill and Hillsborough, North Carolina. Kaufmann wrote:

> It's a local public school for Orange County residents, but New Hope is much more than that for the Triangle school officials and business and community representatives who have taken part in its development.
>
> Many people from outside Orange County had a voice in establishing the new school. Among them were 50 leaders from public schools, universities, businesses and community groups, who joined a task force four years ago to look at education in the Triangle (an area which includes the cities of Raleigh, Durham, and Chapel Hill, North Carolina).
>
> The $8.5 million school has $1 million in hi-tech classroom equipment including a voice-mail system for teachers, classroom telephones and personal computers. The hardware and training were donated by *IBM, Southern Bell and Northern Telecom.

Kaufmann reported that the teachers were hand-picked but that such was not the case with the children who come from rural, working class and professional families and reflect the demographics of the state. She gave the minority count as 20%.

A condition reported by Kaufmann seems a bit disturbing because of its uncertainty. She wrote:

*Companies in the area involved in the school's planning.

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> Whether the school receives all of the equipment it was designed for will depend on the generosity of corporate donors and government funds. Some of that equipment includes television monitors that would enable students to view live telecasts of instructors in the field or to speak with students in foreign countries while watching them on video monitors.

It has always been felt that it is difficult to run a school on conditional propositions, as it makes planning difficult and frustrating, if not impossible.

Another concern about the school is that "children will be grouped by ability rather than age." Throughout decades personal witness has been borne to the unhappiness of some children with this practice.

On September 8, 1991, there appeared, in The News and Observer, a rather detailed description by Kenneth J. Cooper (3), of a private-public school, just opened, and, apparently, the first public school in the nation to be run jointly with a private company, Education Alternatives in Minneapolis, a for-profit company. Non-traditional approaches are to be taken to instruction, technology, classroom design and management. Apparently, pupils will get no grades, and classrooms will have computers instead of desks. Teachers don't have set lesson plans, and the role of textbooks is reduced. The atmosphere in the school is to resemble that at home. Again, personal witness has been borne, throughout decades, of failure of some of these practices.

Another condition reported is that the for-profit company is expected to raise $1.2 million over five years from grants and

donors interested in the experiment. Apparently, that money is to be used to cover the firm's annual management fee of as much as $275,000. Again, conditions make planning difficult for educators.

It is strongly felt that Ernest Boyer's question about model schools offers food for deep thought. It is reported that Mr. Boyer, a former U.S. commissioner of education and, now, President of the Carnegie Foundation for the Advancement of Teaching, asked, "The question is, how do we make it available to all? Or are we going to abandon the notion of the common school for all?" Though this would take more money, it would include ALL children.

An official from big business said what is all too obvious, and that is that grants offered must be in the interests of both the business concerned and the school receiving the money. Since there are many areas where it wouldn't pay businesses to invest, a great many children wouldn't reap the benefits of their counterparts who reside in areas of interest to business.

It is truly believed that there are many ingredients that make for good teaching and happy children (including LD's), who enjoy, and profit by learning. Some of these ingredients are teacher commitment to children; the empowerment of teachers, teachers who are creative and willing to take reasonable risks; understanding and helpful leadership and parental involvement and support.

It is encouraging to note that these beliefs were demonstrated in a broadcast hosted by Roger Mudd, a well-known TV

reporter, in the evening of September 4, 1991 on North Carolina Public Television.

Programs in four U.S. public schools in different geographical locations, Kansas, Massachusetts, Maryland and Texas were shown and explained.

The student body in each of two of the schools, the one in Maryland and the one in Texas, was composed largely of minority students, African-Americans in Maryland and Spanish-Americans in Texas. Each child was encouraged to say, and to believe, that he/she was somebody and could achieve.

Cooperative teaching was observed in the Maryland school. As the children worked cooperatively on solving a problem, the teacher moved about encouraging, challenging and advising them. Though this is a different role from that of the traditional teacher and one which should be recognized in all teacher-training institutions, it seemed to be working because the children attended to the task at hand until it was completed.

The school in Massachusetts, a magnet school, offers programs "in sync" with the outside world. Throughout decades, personal witness has been borne to this practice in varying degrees in many of our public schools.

The "ingredients" stated above have been tried, tested and found true throughout the years. When these ingredients have been applied diligently, children for whom learning is difficult have achieved beyond what was ever dreamed possible.

Fortunately, a number of creative, risk-taking teachers continue to share their successes, as a rather-detailed and substantial number of articles explaining their practices can be found in current editions of educational periodicals.

Shelley B. Wepner (5) described several software packages for extending and enhancing students' reading of different genres, thus linking technology to genre-based reading. All the software described in this particular article is Apple compatible, unless otherwise stated. The different genres covered by Wepner are fairy tales, realistic fiction, a talking comic-book-maker program, science fiction, biography, and historical fiction in social studies. Her example for social studies follows:

> Starters: Social Studies. This software package is similar in design to Story Starters: Science; however, the clip art and story backgrounds relate to common social studies topics: communities in early U.S. settlements (colonial America, the frontier, and the plantation), the American struggle for independence, the Civil War, and progress in the U.S. (early transportation and inventors).
>
> Background scenes of the Revolution can be combined with the package's clip art of famous Americans (e.g., Paul Revere, George Washington, Benjamin Franklin, and Thomas Jefferson), colonial men and women, artillery, artifacts, plants, and buildings to represent memorable ideas and scenes.

Wepner made it clear at the beginning of her column for this month, September 1991, that it is written for the one-computer classroom. She concludes the column thus:

> What should become obvious from this month's examples is the need to use technology in the same vein that we use books to help our students understand and appreciate the joys of communicating with print.

> Software that serves as an open-ended forum for self-expression and discovery offers students real-world opportunities to communicate with and about books.

Whole language and cooperative learning, practices currently "in vogue", have been tried, and results have been reported. Shirley Brand (2), using a whole language approach, has offered educators suggestions for implementing the computer which she has found to be a tremendous help.

First, Brand explains the problems and needs of the learning disabled:

> Their problems are real: inability to sit still long enough to learn, or if they manage to sit still, they can't keep their minds on target (attention-deficit disorder), perseveration (difficulty changing mind-set), memory and word retrieval, sequencing, imagery, inner language, and behavioral difficulties. Sometimes the problems are so interrelated that it is hard to separate one from the other. A teaching system that does not make sense adds to the difficulty. These children need the most skilled teachers and the most effective methods especially suited to their learning strengths.

After explaining the many problems of the learning disabled and how the whole language approach can alleviate some of these problems, she explains in considerable detail, the use and benefits of using the computer. In regard to attention deficit, she says, "I have found that the computer helps keep attention because of the moving screen, and the necessity of using hands, eyes, and sometimes ears."

In regard to reading and writing about a topic, she feels that the self-confidence of the child with a poor self-esteem is

enhanced and that whole language affirms the importance of each child, what he/she has to offer, and whatever his/her language style may be and then explains the use of the computer in that regard.

The Language Experience Recorder (LER) is used to record information the children tell orally. The teacher types as the children watch their words become print on the screen. As soon as they are ready, some children type their stories; others prefer to write theirs. The teacher reads each child's story, and as soon as they feel they are ready, each child reads his/her own. Brand says, "I am always amazed at how quickly disabled readers are able to read fluently their own stories."

In regard to editing their stories, Brand keeps a separate disk for each child on Magic Slate (a word processing program) and also one for each child in LER.

To "publish" their stories, some children illustrate them with their own artwork; others with the colored version of the computer program Print Shop (Balsam, 1984). The children can share their "published booklets" with friends as well as with their families.

For vocabulary expansion, Brand suggests using the computer program Crossword Magic (Mindscape, 1987) to make a puzzle which contains words used in the unit of study. She explains, "Children match a definition or sentence (as it was used in discussion, writing, or reading) with a vocabulary word." Brand has found this practice to be worthwhile.

For sequencing she advises using the 20-column printout or the "banner" printout from LER, cutting the story into logical segments, and then asking the children to put them in correct order.

Brand explains the use of the Spellicopter computer program (Design Ware, 1983): "This game is a game in which a player is required to race against time to sequentially pick up letters that will correctly spell a word missing in a sentence. Sentences from the child's whole language stories are used. This activity, she says, demands attention, and is a help to those with visual-spatial problems.

Brand has found whole language teaching in which instruction is organized by topics or themes (Goodman, 1986) thus helping those children with memory and cognitive problems, and incorporating the many uses of the computer, some examples of which have been offered earlier in this report, to be a successful approach in teaching children, including those with learning problems.

Brand does not neglect phonics. She wrote:

> In a whole language program, readers and writers develop control over the phonic generalizations in the context of using written language sensibly. Whole language teachers do not ignore phonics. Rather they keep it in the perspective of real reading and real writing (Goodman, 1986, p. 38).

It is encouraging to note that Brand recognizes individual differences. For those children finding it difficult to write, she offers some beginning sentences, and, for those who would

rather write than type, she permits them to do so.

Gregory J. Williams' et al. (6) project, The Precise Identification and Remediation for Learning Problems (PIRL), found that some children were able to remove deficits in small group instruction but that individualization was necessary for some. They wrote thus about their program for these children:

> A new program was implemented with instruction provided on a one-to-one basis covering only the letters B, C and F. The general instructional strategies were the same as those employed for the small-group sessions.
>
> Working with the smaller number of letters resulted in both correct and error performances. When performances reached the minimal expectations outlined earlier for the small group, the letter H was added to the set being taught. After an initial decrease in correct responses and a slight increase in errors, the pupil made gradual progress and met the performance aims after five individual sessions completed over a 4-week period. That pattern of progress was repeated in the last phase of the program, in which the letters I and U were added to the instructional set.

Decades of personal experience in education have been convincing in the fact that more than good teaching is necessary if certain children are to learn. It is felt that there is a need beyond the school, perhaps, for social agencies and ministries. Certainly it is difficult for an undernourished child to attend to a task at hand. Surely, those whose parents are non-supportive and non-caring are at a disadvantage in competing with their more fortunate peers. Those whose clothing is noticeably shabby; those who have homemade haircuts; and those who come from homes with limited bathing equipment are also at a disadvantage. These conditions, beyond a child's control, have been

known to give some children a very poor self-concept, and they have made other children belligerent.

The boy with "the bowl-job haircut" is remembered as one whose head seemed constantly bowed.

The black boy who had two white sisters was another with a bowed head. It was revealed that his sisters, who attended the same high school, had asked him not to speak to them when they passed in the halls during the changing of classes.

It is agreed that some children have overcome dreadful obstacles, but, here again, many factors must be considered -- the physical a.. mental strength of the individual child, the degree to which he is considered disadvantaged, etc. and, of course, the way schools have helped him to overcome his problems.

In the examples offered in this paper, there, apparently, is an awareness of individual differences and that each individual, whether or not he/she has a learning problem, is a unique individual and that his/her uniqueness should be recognized and respected.

Unfortunately, learning disabilities have been considered as one type of problem, whereas, in reality, several different problems are involved. Dr. Howard Adelman (1) has expressed this with great clarity, "Inadequacies related to current definitions and criteria and the poor validity of diagnostic procedures ensure that almost anyone manifesting a learning problem could, and many do, end up diagnosed as LD."

Adelman's comments on major concerns, discussed by Gerald Cole, seems to indicate his agreement with a personal belief of this writer that there are some cases in which schools can't do the job alone. He writes:

> Cole's critique implies that narrowly conceived treatment approaches are limiting efficacy. And his emphasis on accounting for broad social, economic, political, and cultural factors highlights the need for society to move beyond a piecemeal approach to learning problem interventions.
>
> Adelman concludes his article thus: Cole's critique of the LD field should not be viewed as an attack but as a constructive effort to move the field ahead.
>
> There is no need for the field to spend additional time listing concerns. Rather, the need is for careful analyses of the problems that confront us and for problem-solving action based on such analyses. To these ends, an interactional perspective of human development and functioning is seen as a useful tool. It can help guide creation of a classification scheme for differentiating the relatively few individuals with true learning disabilities from the vast number of other persons manifesting learning problems. It can guide development of interventions that account for environmental deficiencies as well as individual handicaps. And it can counter the learning mystique.

Conclusions

Since we are living in an age in which technology abounds -- in the homes with VCR's, TV, children's games, etc.; in communities, in libraries, banks, businesses and more, thus affecting parents as well as children, it seems fitting for it to be used to advantage in our schools, and can be so used if certain conditions are met, among them, if teachers are trained to handle technology; if in-service training is readily available to teachers; if parental support and government funding are forth-

coming; if teachers are committed to children, are creative and willing to take reasonable risks; if the authorities grant empowerment to teachers; if needed help is sought from social agencies and ministries; and if diagnoses are accurate and followed by instruction in keeping with the uniqueness of children, for each, including LD's, is a unique individual.

Unfortunately, there are some sections in our country where the many advantages of technology do not exist, or, if they do, are limited. In these areas, it is felt that the conditions mentioned above, coupled with proper use of whatever instructional technology is available, much valuable learning can take place in the classrooms and that this knowledge will enable the students to rise to any situation in which they may find themselves. In an ever-changing world this ability is felt to be a decided asset.

Implications

1. Instructional technology, if handled properly, has a definite place in our schools and should be considered.

2. For effective planning for its use, schools must be assured of money from grants and donors.

3. Technology can be used effectively with cooperative learning and the whole language approach, two educational practices currently "in vogue."

4. Proper use of computers can help overcome a number of learning problems, among them attention deficits, visual-spatial

problems, vocabulary expansion, and sequencing.

5. Correct diagnoses must be made and followed by instruction in keeping with the uniqueness of the children concerned.

6. Teachers should be trained in the use of instructional technology, and in-service, individualized help should be readily available to them.

7. Teacher empowerment should be granted by the authorities.

8. Parental support must be sought.

9. Success stories, found in current educational periodicals should be read, thought about and evaluated in terms of the reader's goals.

10. The sharing of success stories should be continued.

11. Any information, found in educational material, that teachers feel is not in the best interests of children, should be challenged.

12. Progress in schools run by corporate business, those run cooperatively by schools and business, and those run without business and dependent on such things as dedicated teachers, parental support, etc., should be noted.

13. Finally, thought should be given to the question raised by Ernest Boyer, President of the Carnegie Foundation for the Advancement of Teaching: "The question is, how do we make it (the many advantages of model schools) available to all? Or are we going to abandon the notion of the common school for all?"

14. Educators should exercise their voting rights and elect

those politicians whose views on education reflect a genuine interest in educating all children to become happy, thinking, and productive citizens, so essential in a democracy.

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